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ABSTRACT

Evaluation in continuing education must be continuous, not a one-shot process. Steps in evaluating include: preparing goals and objectives, selecting starting points appropriate to the clients, determining programs and attitudes, measuring progress, interpreting evidence of progress, and then using the evaluation to help students by providing guidance and motivation and helping teachers to clarify objectives and plan instruction. Evaluation programs are not used widely for several reasons: 1) It is still not perceived as a necessary part of the professional activities of program developers; 2) program developers regard it as of lower priority than their other activities; 3) it commands little financial support; 4) program developers often feel they are incompetent to carry out such evaluations; 5) evaluation is threatening to some program developers; 6) a truly professional education climate may not exist in the program development unit. (JK)

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EVALUATION OF CONTINUING EDUCATION PROGRAMS

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There are personal needs and reasons for evaluating programs. We know that evaluation is an habitual and necessary activity of all of us. At one level, either consciously or unconsciously, our senses continually assess the state of being of our bodies: are we hungry? tired? in balance? hot? cold? comfortable? tense? Each moment of our lives we measure our state of being against the ideal euphoria which we all seek.

At another level, euphoria is more than physical well-being and involves assessing or appraising the activities of man measured against his aspirations. We are all familiar with the frequent readings we take to see "where we are" in our careers, in our community, in our families, in our friendship circles, etc.

We are so accustomed to continual status probes of a personal kind that we carry over these behaviors to our professional activities. "How am I doing?" becomes "How is the Institute on Drug Abuse going?" or "How is the independent study course on pharmacology succeeding?"

Our professional needs for evaluation are, of course, linked to our personal needs. On the one hand, this close personal linkage is the source of the motivation necessary to carry out the status probe; but, on the other hand, it is also the source of bias and internal conflict of interest which may delude us with illusions of success or confuse us in the open search for improvement. We want to succeed; we want to know how things are going; but our very hopes for success may cause us to misread the

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signs around us so we may be (as the saying goes) the last to know *because* of our emotional predisposition to success.

To counteract personal bias, we may therefore ask friends and colleagues to help us assess what is going on. We may ask students to rate or react to what we are doing. These friend or consumer indices may confirm or not confirm what we have noticed ourselves. Whatever the feedback, we tend, wisely I think, to place more credence in these outside reactions than in our own judgments. Indeed, if we have not been able to mount a more objective evaluation of our work, we are usually quite willing to place a reliance on these "happiness indices" which may also be unwarranted and self-deluding. Friends, colleagues—even students—tend to give back to us what we want to hear. "Even your best friend won't tell you." But when *decisions* must be made on the basis of what is *actually happening*—the reality of success and failures in programs—we usually know that the informal judgments of friends and the happiness indices of consumers are not reliable evaluative devices, even though we will continue, wistfully, to listen to them.

We turn to more formal and sophisticated evaluative processes because of needs which go beyond those personal and professional needs mentioned earlier. We have to make decisions, or our superiors have to make decisions, and we and they need objective information of greater validity and reliability. We need to be sure that we know what is actually happening in our programs. Are we achieving our objectives? How well? Where did things go awry? Why? What can we learn about causes for unexpected results? Should we reschedule the same institute, with the same staff and same agenda, or revise it, or start anew in an effort to make it more relevant, more useful, more goal-directed?

Theodore Roethke, the contemporary American poet who has said so many things so pungently, wrote two lines which fit into our discussion of evaluation. He said: "There's nothing like ignorance to engender wild enthusiasm," and "He who is willing to be vulnerable moves among mysteries." Take the second one first: Continuing education requires us to be innovators—in subject matters for adult pharmacists in a changing world, in format and methodology in a period of fast-moving educational technology. The innovator is vulnerable. He is visible because his neck is way out. He moves among mysteries. The unknowns surround him because he is breaking new ground.

Ignorance of what is actually happening in programs can engender wild enthusiasm when perhaps skeptical disenchantment is what real data would indicate as a basis for decision making.

Sound evaluation can give at least a partial sense of security to educator-innovators—even if results are negative, because the professional has confidence that he is indeed doing a professional job, and his colleagues and superiors know it also. After all, a mark of the professional is *process* as well as *content* orientation. Sound evaluations get into the communications channels and provide an appropriate and restrained kind of visibility for the professional which encourages further program development, supplies new goals, energizes goal-oriented behavior, and enhances careers (1).

We all want the gentle rain of subsidy to fall upon and nourish our programs. In an older and simpler time, subsidy was in many ways easier to get and keep. But things are not that way any

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longer. There is a growing scientism at all levels of American education, and powerful forces are at work which have altered perhaps forever the simple securities and controls which educators once had over their programs (2). This is an era of Big Business in education; Big Government in education; Big Objectives in education; and Big Management in education. Management science and cost accounting have already made their appearance, and continuing subsidy more and more is dependent upon a truly professional appraisal of what has been done, what has happened, the goals achieved, the yields of controlled experiments, and cost studies. The lack of reliable evaluation can often, now, result in a drought of subsidy instead of that steady rain so fervently wished for. The situation today is reminiscent of that wonderful scene in *Paradise Lost* where the Devil Satan is seeking to arouse his fallen followers who lie abject in hellish misery. He cries to them, "Awake, arise, or be forever fallen (3)!" Satan's words complete the analogy, for to many in academia, the promptings they now hear to engage in more scientific evaluation seem to have an origin at least as low as the devil.

There are, then, many reasons—many needs—for evaluation in continuing education. These needs are personal, professional, and managerial. Since by nature we already carry on simple habitual evaluations all the time, we can readily improve our evaluations through the use of more reliable processes.

Evaluation—what is it?

In the past few days we have all been following the remarkable achievements of Apollo 11. The precision with which this mission achieved its objectives has been astonishing. What a magnificent tribute to the educability of man, that three men could on their first attempt accomplish with such exactness that which no human being has ever before accomplished, in an alien, hostile, and cruelly restrictive environment. As educators we should take heart from this magnificent example of the effectiveness of teaching and learning for the performance of difficult tasks *de novo*. Perhaps no other human endeavor in all man's history has demonstrated so dramatically the power and effectiveness of education and training. One recalls Robert Theobald's statement that ". . . the task of education is to make the impossible appear relevant (4)," and the hard insistence of Paul Sharp, president of Drake University, that ". . . education was created in the first place to be useful (5)." Relevant and useful, indeed. In the Apollo moonshots there was a vast apparatus to evaluate every aspect of the mission so that the training, the equipment, the flight plan, the activities of the astronauts, the feedback of data all bore immediately on the purposes to be achieved. And these data were necessary so that appropriate decisions could be made as required at every step. That is what evaluation is: "The provision of information through formal means, such as criteria, measurement, and statistics, to serve as rational bases for making judgments in decision situations (6)."

Stufflebeam has suggested this rationale for scientific evaluation:

"1. the quality of (educational) programs depends upon the quality of decisions in and about the programs;

2. the quality of decisions depends upon decision-makers' abilities to identify the alternatives which comprise decision situations and to make sound judgments of these alternatives;

3. making sound judgments requires timely access to valid and reliable information pertaining to the alternatives;

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4. the availability of such information requires systematic means to supply it; and
5. the processes necessary for providing this information for decision-making collectively comprise the concept of evaluation (7)."

Whether the mission is to land a man on the moon or to produce and teach a seminar on control procedures in drug production, the evaluative process is equally necessary. Valid decision making, involving sound judgments among alternatives defined by reliable information, yielded by systematic evaluative means—this is our goal in continuing education in pharmacy, as well as in all other kinds of education.

We considered earlier that all of us habitually engage in casual types of evaluation, and in self-check probes or inquiries to let us know how we are doing. Do-it-yourself evaluations may be extended into more formal evaluative studies and, finally, to scientific research (8). On this scale from the simple and informal to the complex and formal, the rigor of the evaluation is the chief although not the only variable. At the upper end (as in the Apollo moonshot) the processes for ensuring exactness, completeness, and immediacy of information relative to making mission-achieving decisions is scientific, objective. As you go down the scale, information is less reliable, more biased: a "seat of the pants" blend of information and intuition—like that used by Lindberg, or the Wright brothers, or Peary, or Columbus in their great personal contributions to the exploration of earth space.

Similarly, many great individually conceived continuing education programs in pharmacy make landmark achievements; yet before us in this rapidly changing, ever-more-demanding world are needs and missions which perhaps can best be achieved—indeed may only be achieved—if a more rigorous process of evaluation is employed.

The rigor of evaluation necessary in continuing education may be suggested by pointing out that we must employ a process of collecting information, organizing information, analyzing information, and reporting information. We need criteria for assessing the validity of information (is it what the decision-maker really needs), the reliability of information (is the information stable, can it be replicated again and again), is it timely (available when the decision-maker needs it), is it pervasive (does it reach all who need it), and is it credible (can it be trusted) (9).

The evaluation needs of the person who designs and provides continuing education programs in pharmacy are not unlike those of the Psalmist who cried out,

> Lord, make me to know mine end, and the measure of my days, what it is, that I may know how frail I am (10).

To which as an educator, I can only add "Amen."

What is the Process of Evaluation?

If evaluation is to be of long-range usefulness to continuing education in pharmacy, it must be continuous. Not one-shot evaluations but, if possible, an evaluation process which is built into the very fabric of our programs, a cycle of activities which is never ending because decision making is never ending, because the need of pharmacists to learn is never ending.

A. Preparing goals and objectives. The process begins with need discovery. The educator in charge of continuing education programs in pharmacy is

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sensitive to needs in pharmacists, in the society served by pharmacists. These sensitivities can be sharpened, refined, validated, and defined into statements of purpose, goals, objectives for programs. The objectives must of course be stated to include the context, the social and learning *milieu*, in which the objective is valid and relevant and useful for the learners—the clients who are to profit from the program.

Preparing objectives is a complex activity. Whose objectives? There are a number to be considered: Society has over-all aims which must be considered, but these are usually so broad and so abstract that they do not help to define specific programs. A profession such as pharmacy has its own purposes; but these again are likely to be too general for mounting specific programs. However, social and professional aims must certainly be compatible with and relevant to the objectives of specific continuing education programs for pharmacists.

The teachers of continuing education in pharmacy formulate objectives to guide their programs. The objectives describe the changes the teachers wish to bring about; these are action objectives. To act upon them the program developer must know, first, the needs and objectives of his clients. He needs some mechanism in addition to sensitivity, intuition, and experience to be sure that his objectives and the objectives of his clients are reasonably compatible; in fact, the teacher-learner objectives must derive from a common base, or the program is likely to be ineffectual (11).

Stating objectives may be viewed as a chore which can be by-passed; it is easy to follow an action orientation which decrees that we get started on the job without worrying about writing out precisely what we intend to do. Sometimes this condition prevails simply because we do not really know (our information system is so faulty) what we need to do, and we want to leave open clear options as we go along. But note that sound decisions cannot be made without clear alternatives, valid and reliable information. The expectation that we can make better decisions about goals and activities later on if we have not first set up a tight information system to develop goals and activities is naive, and usually disastrous.

Learning activities are intended to change behavior. Hence objectives should be written if possible in behavioral terms. What kind of behavior is desired as an outcome; in what context does the behavior have relevance; what content does the learner have to accept and employ in achieving the behavior change; what persons, agencies, or organizations are the agents in initiating, teaching, and establishing the new behaviors?

Randebaugh suggests nine criteria for shaping educational objectives:

"1. Are the objectives explicit in specifying the area in which the changed behavior is to operate?
2. Are the objectives definite with respect to the kind of behavioral change to be accomplished?
3. Are the objectives stated so as to identify those who are to be involved?
4. Are the objectives the result of cooperation between continuing education personnel and the others concerned to analyze the situation and identify problems?
5. Are the objectives compatible with the general aims of society (the profession of pharmacy, and the University)?*

*Parentheses indicate slight modification to apply more directly to continuing education in pharmacy.

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6. Are the objectives specific enough to serve as a base for planning, conducting and evaluating in an action educational program?
7. Are the objectives sufficiently limited in number to avoid undue confusion and diffusion of effort on the part of those involved?
8. Are the objectives achievable, considering the level of concern, the maturity of persons involved, and the resources available?
9. Are the objectives such that can relate intimately to both immediate and long-time educational goals, and lead to even higher levels of achievement (12)?"

Objectives which meet the criteria above will provide a base for the measurement and interpretation of data later on. In fact, the absence of adequate behavioral objectives leaves the educator without a valid basis for determining success or failure of the continuing education program.

B. Knowing your client group: selecting starting points. Of primary importance in the evaluative process is knowing your clients. For example, how can you write behavioral objectives unless you know current client (learner) behaviors well enough to discern needed changed behaviors? Knowing your clients also implies intimate knowledge of the total as well as specific environment in which your clients live, work, and learn. Again, this requirement implies an information collection system whose pervasiveness and accuracy are unquestioned.

I have been fortunate in having the opportunity to observe a continuing education program in pharmacy from its inception to maturity at the University of Wisconsin. Men like Louis Busse, Bill Apple, Gus Lemberger, Dick Strommen, and Bill Blockstein have made it their business before anything else to know their clients, the total context of pharmacy services in the state, and the needs and problems which require an on-going program of continuing education in pharmacy. Informal and formal means of knowing clients are required. In this process, starting points for continuing learning are discovered, defined, analyzed, and processed into learning objectives.

Continuing education programs must start where the clients—the learners—are. This is no empty cliché. If you start too high, you fail; if you start too low, you drive clients away in disgust and boredom. Of course, the best way to establish starting points for learning is to have a mechanism for assessing specific professional behaviors of pharmacists. With such information as a benchmark, you can then more confidently establish continuing learning objectives for pharmacists which will be clearly recognized as relevant and useful.

Measurements of behaviors and performances must be accurate both in the initial stages of program conception and in the later stages of program evaluation. You cannot measure what clients learned from your program if you do not know the state of their learning before the program started. You cannot measure achievement of behavioral objectives if you do not have at the start measures of present behaviors. Standards of measure and behavior are, after all, two of the criteria which mark off a profession from other human activity. As professionals we take pride in our ability to measure, to quantify, to analyze, to interpret, to conform our behaviors to rigorous standards in our fields. I am reminded of a delightful passage written in the early seventeenth century by a famous British lawyer, John Seldon. Seldon was writing, as befits a lawyer, on equity. He wanted to show how

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equity differs from law. The passage goes: ". . . for law we have a measure, know what to trust; [but] equity is according to the conscience of him that is Chancellor. 'Tis all one as if they should make the standard measure we call foot a chancellor's foot; what an uncertain measure this would be? One Chancellor has a long foot, another a short foot, a third an indifferent foot. 'Tis the same in the Chancellor's conscience (13)."

In a sense, since we are seeking behavioral changes in pharmacists, the pharmacists themselves are part of our measurement system. Indeed, if the ultimate evaluation of the usefulness of pharmacy and pharmacists in society is the health and safety of people as a result of the work of pharmacists, the pharmacist is the starting point, and we must measure him in his work with people, not from some vague and vacillating standard of a Chancellor's conscience, but with fixed and agreed upon professional measures, such as the foot.

C. Determining programs and activities. From carefully constructed objectives based upon a precise knowledge of your clients' behaviors and needs, you proceed to determine programs and activities. The plan of work you develop includes the specific tasks to be carried out, the substantive areas to be employed, how you propose to teach your clients in their situation, the learning activities which you will prepare and administer, who will do what and how you will arrange for cooperation and follow through among personnel, the time schedule you must adhere to, how you propose to measure your progress towards the stated goals, and how you propose to make decisions along the way if information feedback indicates a need for a change in the basic plan.

Involved in this phase (sometimes called "input evaluation") is your activity in organizing and in utilizing resources to meet program goals and objectives, your total instructional strategy to solve learning problems, and your contingencies for evolving new strategies if needed.

D. Measuring progress. When the program is placed into operation, the pharmacists are signed up, and the teaching and learning begin, the program director must be able to tell what is happening. Is progress being made towards objectives? How do you know? Know for sure, that is. Here you can see the importance of specific behavioral objectives at the start, a knowledge of clients (possibly brought up-to-date by some form of pretest at the start of the program) and a detailed plan of work. If specific measures do not indicate progress towards objectives, do you have adequate information for making changes in the program? Regular feedback from the learners is needed at this stage. As your program moves to completion, the data collected should make it possible for you to determine not only whether objectives are being achieved but also whether new objectives can be determined for future programs which follow up this activity. Measuring progress is in effect an evaluation of your design, for you will uncover here the evidence of good or poor planning, good or poor data for decision making. If your data do not yield meaningful results, you are very much in the unenviable position of the poet William Wordsworth who in a small poem remarked:

> I have often sighed to measure
> by myself a lonely pleasure
> (14).

If measurement is solely personal and intuitive, it is pretty hard to be certain of what is happening.

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E. Interpreting evidence of progress. We need now to know a number of things as exactly as possible, in order to analyze and interpret our findings.

1. Have there been any changes in the behavior of learners? What changes? How do these changes relate to the objectives of the program?
2. Have the learners evidenced other changes, attitudinal, substantive, or what?
3. Have the teacher-staff-participants undergone any changes? They are part of the process, too, and do not emerge from programs untouched by their experiences.
4. Did the planned activities in the learning situations perform their function? Why or why not? Are changes needed?
5. What decisions must be made; on the basis of what evidence?
6. What follow-up programming can we do from this point? What data will we need to start planning a follow-up activity and future programming?

Interpreting data is largely an expression of the information-gathering devices which were built into the teaching and learning program. You had to decide *what* information was needed to give evidence of progress toward goals, *at what points* information was needed, the *source and populations* of the information required, the *instruments and techniques* which would be used, and the plan for *organizing and analyzing* the information.

Frank Alexander has pointed out that educators are prone to assume that evidence collected regarding continuing education programs will be positive (15). It is essential therefore that interpreting evidence of progress be objective and based upon measurements which are unequivocal. The over-all plan should give ample time and emphasis to an analysis of all the evidence, including if necessary follow-up measures after the program has formally ended.

F. Using evaluation in continuing education. The purposes and by-products of evaluating continuing education have been summarized by Alexander (16). Evaluation studies, he points out,[3] have important uses in:

1. *Helping to clarify teaching and learning objectives.* Struggling through an evaluation process not only provides knowledge about what is happening in teaching and learning but also gives all the participants experience and confidence in the necessary steps in defining objectives.
2. *Planning instruction or programs on a before testing basis.* The teacher thus knows the state of his learners in terms of behaviors, knowledge, readiness for further learning, prerequisite skills, errors, and inadequacies of background and experience.
3. *Motivating learning.* If objectives have been clarified for learners, and are accepted by them, greater motivation for learning is generated. If objectives are relative and useful, intrinsic motivation is likely to be elicited, of far greater power in learning than the usual extrinsic motivations which are characteristics of learners in programs whose objectives are less relevant and useful.
4. *Providing guidance to learners.* The information-gathering system feeds information back to learners as well as teachers so that both can be guided towards program objectives, and the stage set for further continuing learning.

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5. *Development of teachers.* Teachers who carry out evaluative programs tend to value objective, experimental, and creative approaches to learning and teaching.

Probably one of the most important uses of evaluation in continuing education for pharmacists is in future programming—the continuation, revision, discontinuation, or alteration of programs (17). Let me repeat the definition of evaluation which I used earlier: "Evaluation is the provision of information through formal means, such as criteria, measurement and statistics, to serve as a rational basis for making judgments in decision situations (18)." Looked upon in this professional way, evaluation need not threaten continuing education workers who may otherwise mistakenly fear evaluation as somebody else's effort to find out what they, themselves, are doing. Evaluation is a professional tool for making decisions in developing and refining programs. It is not a bloody meat axe used against teachers to expose personal weaknesses.

Indeed, properly conceived and executed, evaluation studies rank as scientific research, are publishable, and enhance the reputations of those who perform them.

Why, then, are evaluations of continuing education programs in pharmacy —and other fields—not more widely and regularly used? I suggest the following reasons:

1. Evaluation is still not perceived as a necessary part of the professional activity of program developers.
2. Program developers are generally overburdened with program, administrative, personnel, and fiscal responsibilities and tend to give evaluation a lower priority than the bread and butter essentials of their offices.
3. Continuing education programs often must operate without subsidy, or with very minimal subsidy, and hence there is frequently no dollar support which can be given to evaluation processes, which do cost time and money.
4. Program developers often believe that they are not competent to mount adequate evaluation studies. Rather than to do a job poorly, they may decide not to do evaluations at all, except of the casual and informal kind.
5. Some program developers may still feel threatened by the whole concept of evaluation, or may even see evaluation in some curious way as violating the ancient and honorable concept of academic freedom.
6. A truly professional education climate may not exist in the program development unit. That is to say, there may be a professional climate with respect to the *substantive* aspects of a pharmacy continuing education program but not a professional climate with respect to the teaching-learning decision-making aspects of the program.

In my paper I hope I have supplied the counterarguments to five of the six above-listed reasons for not engaging in evaluation studies. I have not, however, supplied a counterargument for item number three, which refers to the poverty-level financing of many continuing education programs. Unfortunately this is still a fact, and without an adequate budget, adequate evaluation is pretty hard to come by. I notice, however, that other sessions of this conference have addressed themselves to this problem, and I hope that continuing education programs in pharmacy will be persistent in demanding, and successful in obtaining, the subsidy or other support

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necessary to carry on regular evaluations.

However, even without adequate subsidy, you already do carry on casual and informal evaluations. One of the best ways of drawing in subsidy would be gradually to step up the level of evaluation to the formal research level. Here you can engage the sympathy and concern of a number of people in a university—the graduate school and the school of education among them. Graduate students doing theses are an excellent and appropriate means of drawing in subsidy.

Summary/Conclusion

We have ranged rather widely in this short paper. My fear is that the topic has been so broad that it has given latitude for platitude. Nevertheless, as the saying goes, the opus must focus, and I have tried to focus on a variety of needs—personal, professional, managerial—for evaluation in continuing education; on what evaluation is—a professional tool supplying valid and reliable information for you as decision makers in pharmacy education; as a process with relevance and usefulness in program development, assessment, and the cycle of follow through.

We are all evaluators. You are evaluating me now as I speak; you are evaluating this conference and one another. I have tried to suggest that we build on this natural and habitual evaluative behavior, and particularly that we use means and methods, instruments, and statistics which quantify and qualify our measures of what is happening in our continuing education pharmacy programs. Only if we have valid and reliable information about what is happening to our learners in our programs will we be able to be confident in developing, in managing, and in assessing our programs. □

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